

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference Gw 0223 PCT-	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/009361	International filing date (day/month/year) 23 August 2003 (23.08.2003)	Priority date (day/month/year) 06 September 2002 (06.09.2002)
International Patent Classification (IPC) or national classification and IPC E21D 15/44		
Applicant DBT GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 6 sheets.

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

Date of submission of the demand 05 March 2004 (05.03.2004)	Date of completion of this report 17 December 2004 (17.12.2004)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International Application No.

PCT/EP2003/009361

I. Basis of the report

1. With regard to the elements of the international application:^{*} the international application as originally filed the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

 the claims:

pages _____, as originally filed

pages _____, as amended (together with any statement under Article 19)

pages _____, filed with the demand

pages _____, filed with the letter of _____ 11 June 2004 (11.06.2004)

 the drawings:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

 the sequence listing part of the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

 the language of a translation furnished for the purposes of international search (under Rule 23.1(b)). the language of publication of the international application (under Rule 48.3(b)). the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

 contained in the international application in written form. filed together with the international application in computer readable form. furnished subsequently to this Authority in written form. furnished subsequently to this Authority in computer readable form. The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished. The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. The amendments have resulted in the cancellation of: the description, pages _____ the claims, Nos. _____ the drawings, sheets/fig _____5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).^{**}

^{*} Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

^{**} Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/09361

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-29	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-29	NO
Industrial applicability (IA)	Claims	1-29	YES
	Claims		NO

2. Citations and explanations

1. GB-A-1 541 252 (D1) and FR-A-2 072 357 (D2) disclose methods for joining the functional parts of working devices comprising a first part that is provided with an outer wall section and a second part that is provided with an inner wall section (D1: 1, 2; D2: 1, 2), which can be assembled and joined together by means of overlapping wall sections, said method comprising the steps: arranging the parts with wall sections that overlap with clearance fit or transition fit (D1: a press fit would have been explicitly mentioned in the description if a press fit of this kind had been desired; D2: page 2, line 3) to form a cavity by means of recesses (D1: 3/3; D2: 4) provided in the two overlapping wall sections and filling the cavity with a pourable plastic casting material (D1: page 1, line 47; D2: page 2, line 11) that prevents relative displacements between the parts in the cured or solidified state by positive locking (the adhesive mentioned in D1 can optionally have "no" adhesive properties and can therefore be regarded as a plastic (see page 2, lines 68 to 71); D2 discloses a product (page 2, line 11) which, when cold (line 15), undergoes a transformation (line 14) and hardens (line 15)).

The subject matter of claim 1 differs from the known method in that the working devices are hydraulic or

pneumatic working cylinders, such as props for underground mining, and in that the casting material, when hardened, withstands shearing force stresses of at least 20 N/mm².

However, this cannot be considered inventive, because it concerns a method for forming joints which is known to those skilled in the art but can nevertheless be applied for hydraulic or pneumatic working cylinders such as props for underground mining. Moreover, it is the object in D1 and D2 to form joints which can withstand certain external stresses (D1: cylinder tube and cylinder head of internal combustion engines; D2: page 2, lines 1 and 15 and 16), which also include shearing force stresses. The feature of the shearing force stress of 20 N/mm² is therefore an obvious selection among different parameters (see PCT Examination Guidelines, paragraph IV, 8.8 (C1)(ii)).

Consequently, the subject matter of claim 1 does not comply with the requirements of inventive step within the meaning of PCT Article 33(3).

2. D1 and D2 likewise disclose joints for functional parts of working devices, comprising a first part that is provided with an outer wall section and a second part (D1: 1, 2; D2: 1, 2) that is provided with an inner wall section, which parts can be assembled and joined together by means of wall sections that overlap with clearance fit or transition fit (D1: a press fit would have been explicitly mentioned in the description if a press fit of this kind had been desired; D2: page 2, line 3), the two wall sections each having a recess (D1: 3; D2: 3, 4), which recesses, in the joined state, form a cavity that is filled with a pourable plastic casting material (D1: page 1, line 47; D2: page 2, line 11) which, when hardened or solidified, connects

the two parts by positive locking (the adhesive mentioned in D1 can optionally have "no" adhesive properties and can therefore be regarded as a plastic (see page 2, lines 68 to 71); D2 discloses a product (page 2, line 11 which, when cold (line 15), undergoes a transformation (line 14) and hardens (line 15)).

The subject matter of claim 6 differs from the known joint in that the working devices are hydraulic or pneumatic working cylinders, such as props for underground mining, and in that the casting material, when hardened, withstands shearing force stresses of at least 20 N/mm^2 .

However, this cannot be considered inventive, because it concerns a joint which is known to those skilled in the art but can nevertheless be applied for hydraulic or pneumatic working cylinders such as props for underground mining. Moreover, it is the object in D1 and D2 to form joints which can withstand certain external stresses (D1: cylinder tube and cylinder head of internal combustion engines; D2: page 2, lines 1 and 15 and 16), which also include shearing force stresses. The feature of the shearing force stress of 20 N/mm^2 is therefore an obvious selection among different parameters (see PCT Examination Guidelines, paragraph IV, 8.8 (C1)(ii)).

Consequently, the subject matter of claim 6 does not comply with the requirements of inventive step within the meaning of PCT Article 33(3).

3. D2, page 2, lines 20 to 25 discloses a method for disassembling the joint as per claim 6, in which a chemical reaction releases the joint, the functional parts are separated and plastic material residues are removed from the recesses. Heating the wall sections to plasticize the plastics material would be a

conceivable step for a person skilled in the art seeking to disassemble the joint. Consequently, the subject matter of claim 29 does not comply with the requirements of inventive step within the meaning of PCT Article 33(3).

4. Dependent claims 2-5 and 7-28 do not contain any features which, in combination with the features of any claim to which they refer, meet the PCT requirements for inventive step.